IN THE CLAIMS

Please amend the claims as follows:

1-18 (Cancelled)

19. (New): An aluminium oxide powder produced by flame hydrolysis which has

a BET surface area ranging from 135 to 190 m^2/g,

a dibutyl phthalate absorption ranging from 150 to 350 g/100 g of aluminium oxide powder,

an OH density ranging from 8 to 12 OH/nm^2;

wherein high-resolution TEM pictures show only crystalline primary particles; and

wherein an X-ray diffractogram of the aluminium oxide powder exhibits an intensity, expressed as the counting rate, of less than 50 at an angle 2 theta of 67°.

20. (New): The aluminium oxide powder produced by flame hydrolysis according to claim 19, which has a chloride content of less than 1.5 wt. %.

21. (New): The aluminium oxide powder produced by flame hydrolysis according to claim 19, wherein the proportion of particles having a diameter greater than 45 μm ranges from 0.0001 to 0.05 wt. %.

22. (New): A process for producing the aluminium oxide powder produced by flame hydrolysis according to claim 19, comprising:

vaporizing aluminium chloride to produce a vapour,

transferring the vapour by means of a carrier gas to a mixing chamber to produce a gas containing 0.08 to 0.36 kg of $AlCl_3/m^3$ of gas and, separately therefrom,

supplying hydrogen and air (primary air) to the mixing chamber, wherein the hydrogen and air may optionally be enriched with oxygen and/or may optionally be pre-heated, then

igniting the mixture of aluminium chloride vapour, hydrogen and air in a burner which produces a flame which burns into a reaction chamber that is separated from the surrounding air,

separating the solid material produced by the flame from the gaseous substances, and

treating the solid material with steam and optionally with air;

wherein the discharge rate of the reaction mixture from the mixing chamber into the reaction chamber is at least 10 m/s, and the lambda value ranges from 1 to 10 and the gamma value ranges from 1 to 15.

23. (New): The process according to claim 22, wherein a secondary gas consisting of air and/or nitrogen is introduced into the reaction chamber.

24. (New): The process according to claim 22, wherein the ratio primary air/secondary gas is from 10 to 0.5.

25. (New): A method for absorbing ink into an ink-jet paper or another ink-jet medium comprising incorporating the aluminium oxide powder produced by flame hydrolysis according to claim 19 into the paper or an ink-jet medium.

26. (New): A method for abrading or polishing a oxidic or metallic coating or other object comprising contacting said coating or object with the aluminium oxide powder produced by flame hydrolysis according to claim 19.

27. (New): A method for making a dispersion comprising incorporating the aluminium oxide powder produced by flame hydrolysis according to claim 19 into a composition.

28. (New): A method of using as a filler, as a carrier, as a catalytically active substance, as a ceramics base, in the electronics industry, in the cosmetics industry, as an additive in the silicone and rubber industry, for adjusting the rheology of liquid systems, for heat stabilisation, in the surface coatings industry the aluminum oxide powder produced by flame hydrolysis according to claim 19.

29. (New): A composition comprising the aluminum oxide powder produced by flame hydrolysis of claim 19.

30. (New): The composition of claim 29, which contains the aluminum oxide powder as a filler or as a carrier.

31. (New): The composition of claim 29, which contains the aluminum oxide powder as a catalytically active ingredient.

32. (New): A ceramics base comprising the aluminum oxide powder produced by flame hydrolysis of claim 19.

33. (New): A cosmetic comprising the aluminum oxide powder produced by flame hydrolysis of claim 19.

34. (New): A silicone or rubber product comprising the aluminum oxide powder produced by flame hydrolysis of claim 19.

35. (New): An ink-jet paper or other ink-jet medium comprising the aluminum oxide powder produced by flame hydrolysis of claim 19.